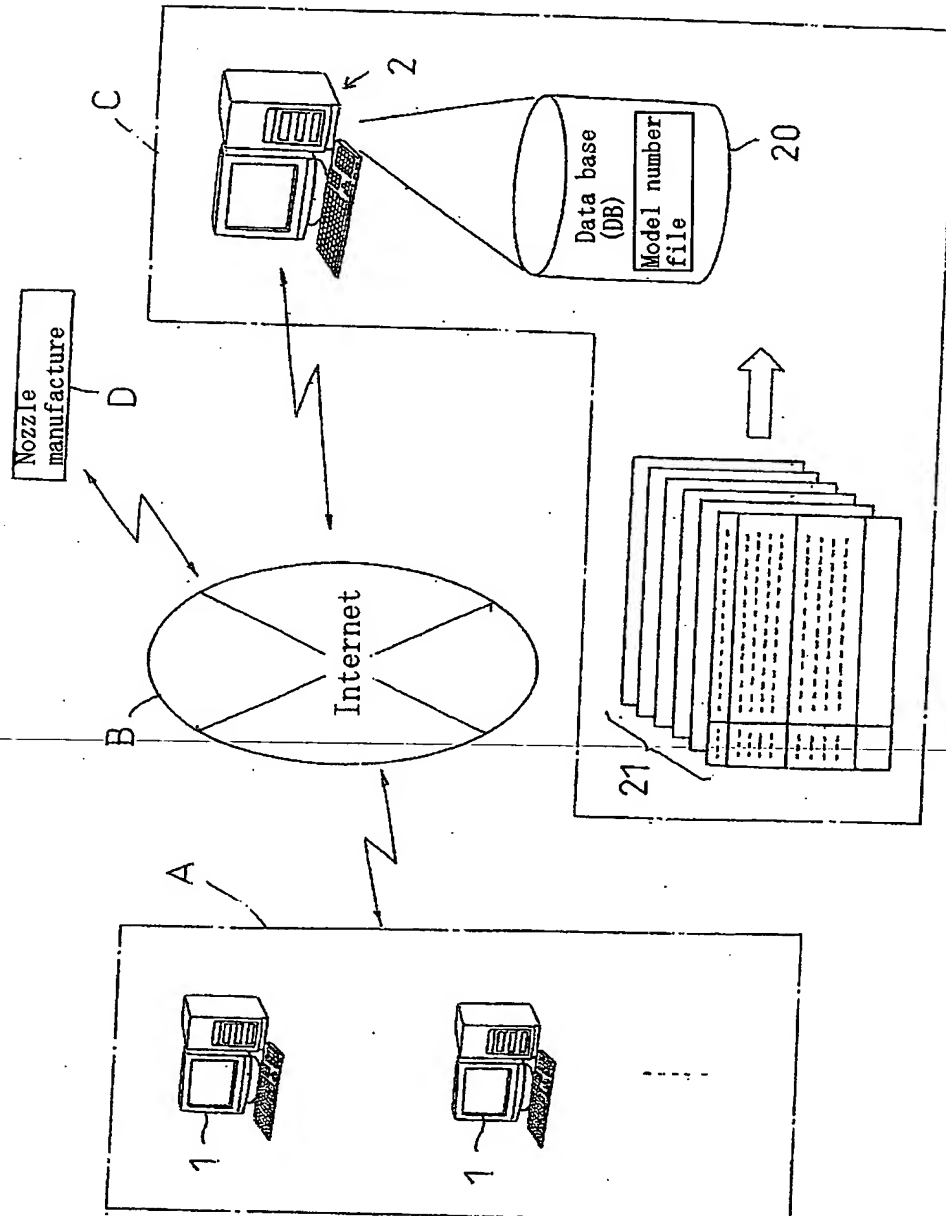


Fig 1



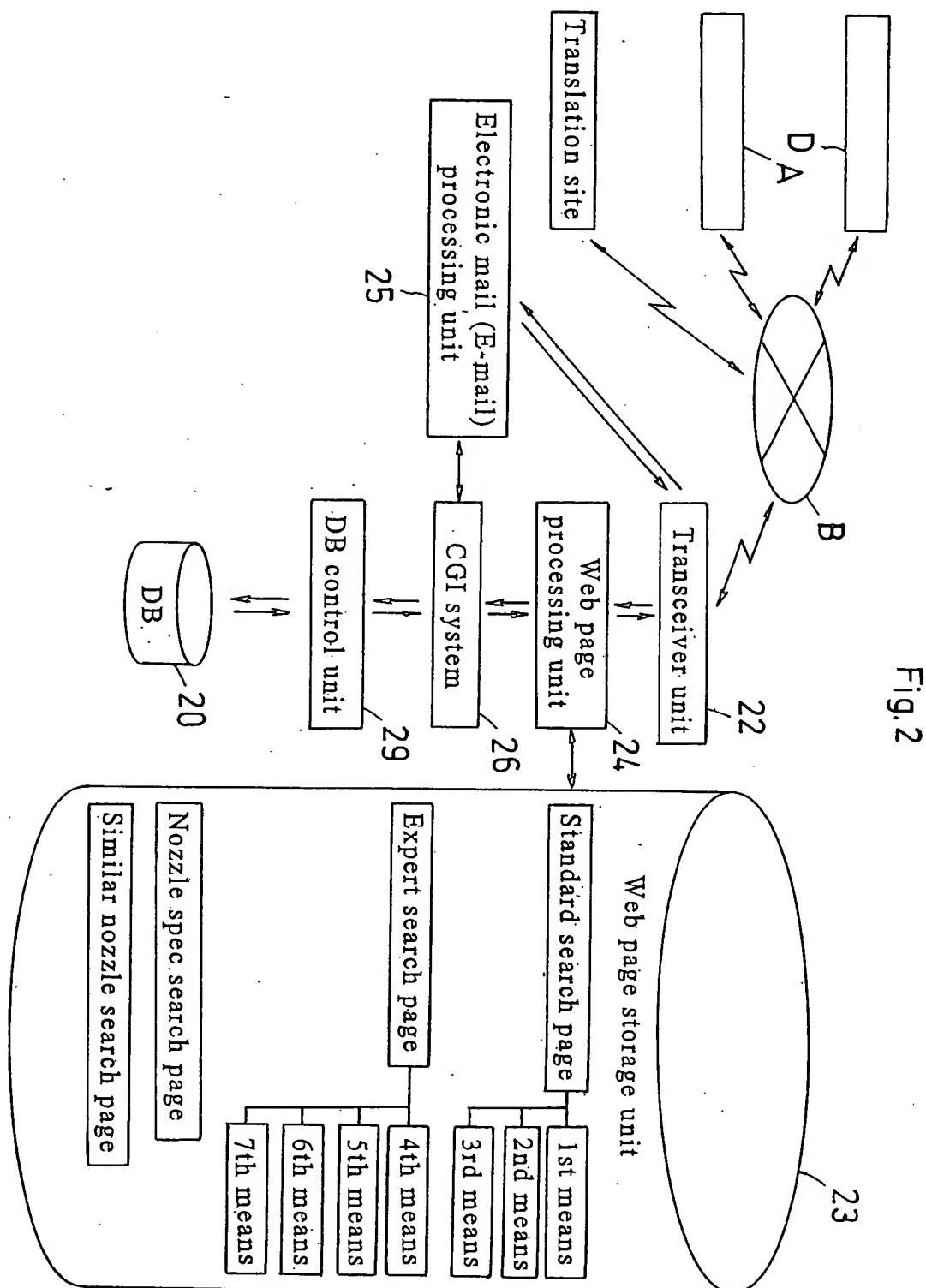


Fig 3

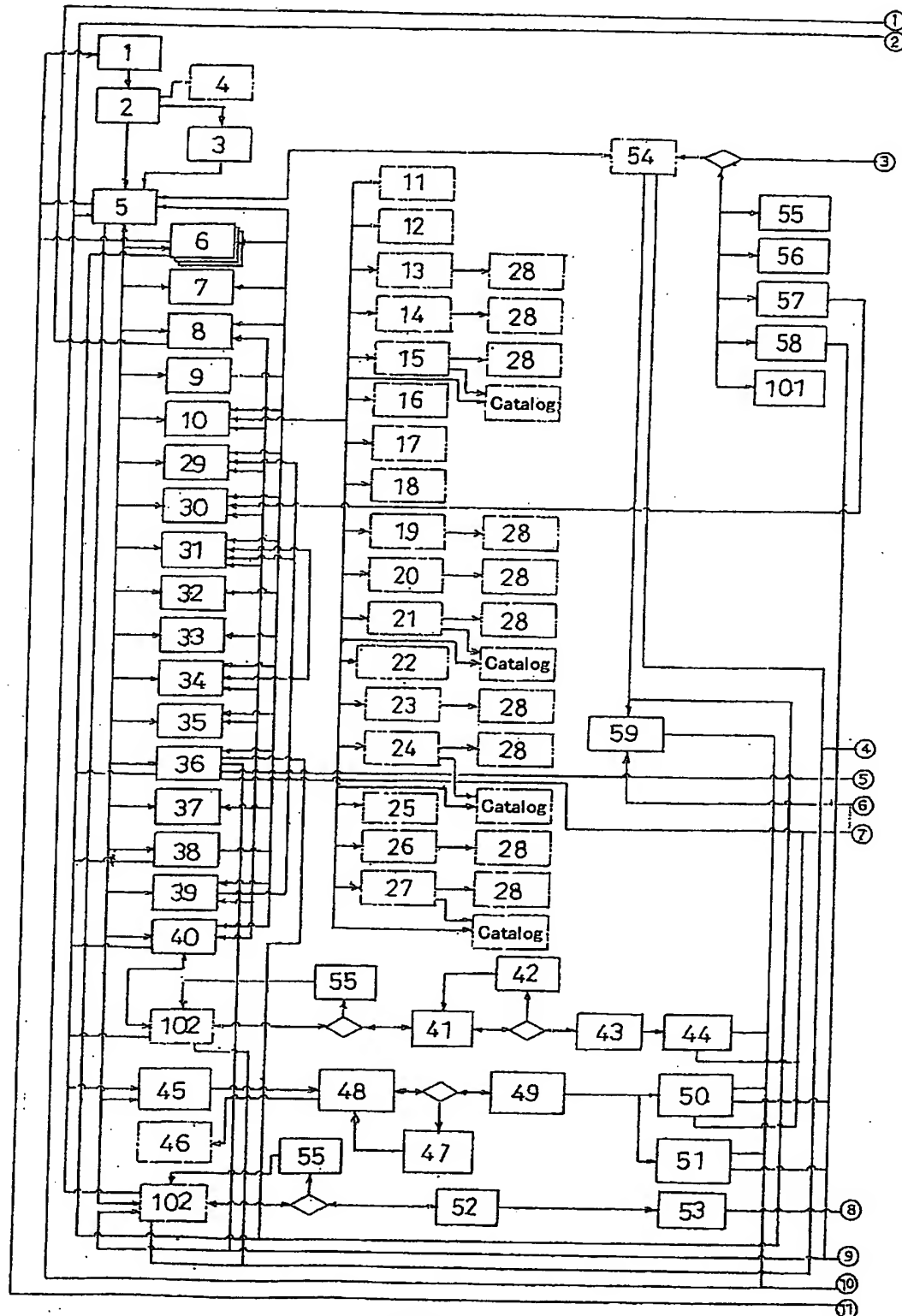


Fig 4

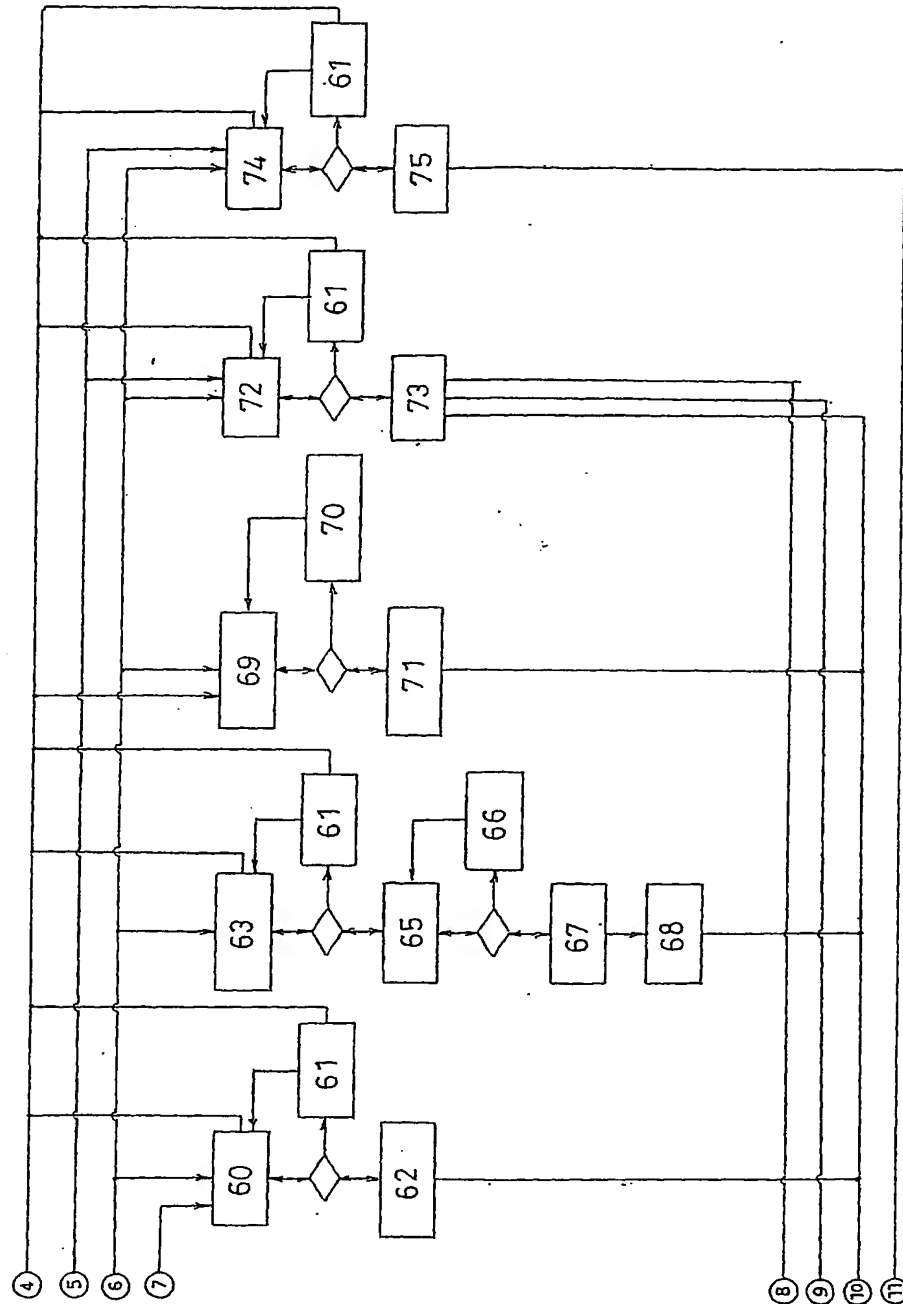


Fig.5

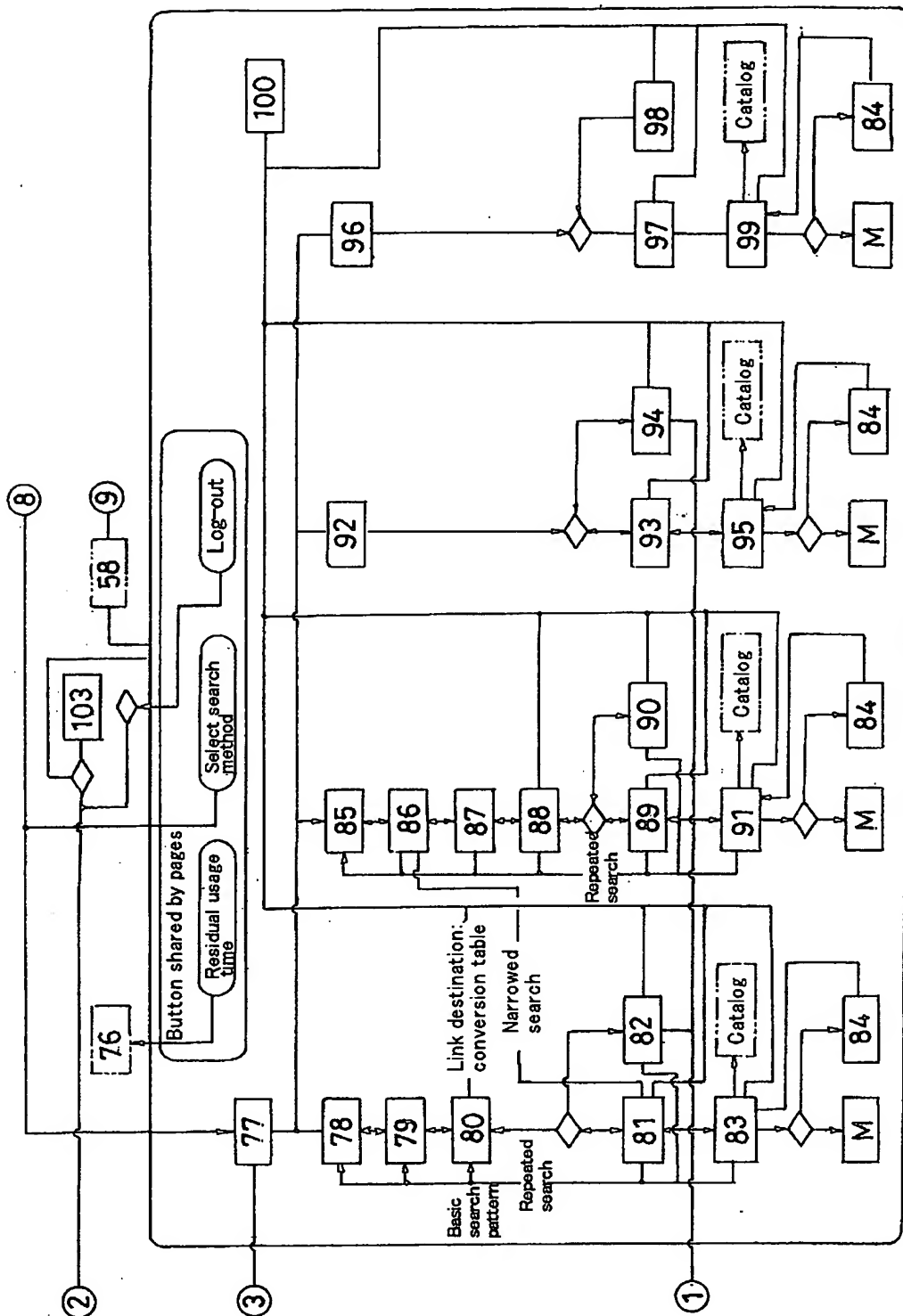


Fig.6

Select the type of search

Begin the search operation from this page



Residual usage time

Four search methods usable freely and repeatedly within agreed usage time

Nozzle model number search

Standard search

[General criteria input: multiple nozzle model number search]

Rough search method. By inputting simplified set of search criteria, many nozzle numbers can be retrieved over a wide range. Further, by linking to "expert search" input screen, narrowed search can be made

To search screen

40

Expert search

[Input detailed criteria: high-accuracy nozzle model number search]

High accuracy search method. By inputting pressure, flow rate and the like search criteria in detail, the narrowed search is made possible in which the nozzle model number is retrieved at pin point from a vast number of numerical values from DB.

To search screen

40

Nozzle spec search

Nozzle spec search

[Input nozzle model number: nozzle spec search]

By inputting full nozzle model number as search criteria, the manufacture name and detailed spec of the nozzle can be retrieved. Also, the ambiguous search function may make possible search by inputting a part of the model number.

To search screen

40

Similar nozzle search

Similar nozzle search

[Input nozzle model number: similar nozzle search]

By inputting one nozzle model number, similar nozzles can be retrieved from nozzles of the world. The retrieved nozzle, however, not necessarily has the same performance as the nozzle of which the model number is input by the user. Therefore, please study it for reference.

To search screen

40

Note

Fig.7

Standard search

Log-out (to content page)
Select search method

Search criteria input: STEP 1

Residual usage time

[Input general nozzle spec: multiple model number search]

41

Search criteria you have entered (Click on any of these steps to modify related entry)		
Step 1 (nozzle category)	Step 2 (spray pattern)	Step 3 (nozzle spec)
(Select nozzle type)	(Select spray pattern)	(Designate spec such as pressure, flow rate)

<p>Step 1: Select category of required nozzle</p> <ul style="list-style-type: none"> <input type="radio"/> [Liquid] nozzles Nozzle for spraying liquid such as water or oil exclusively <input type="radio"/> [Liquid + gas] nozzle Nozzle for spraying liquid such as water and chemical, air and various gases simultaneously <input type="radio"/> [Gas] nozzles Nozzle for spraying air or various other gases exclusively <input type="radio"/> [Steam] nozzle Nozzle for spraying steam exclusively <input type="radio"/> [Rotation nozzles] Nozzle having such a mechanism to rotate as a result of the reaction force generated by the discharge of liquid from its orifice <input type="radio"/> [Spray devices] Various devices using nozzle such as humidifier and cleaner <p>Previous page Next page</p> <p>STEP 2</p>

Fig.8

Expert search

Log-out (to content page)
Select search method

Search criteria input : STEP 2

Residual usage time

(input detailed nozzle spec: high-accuracy nozzle model number search)

41

Search criteria you have entered (Click on any of these steps to modify related entry)		
<u>Step 1</u> nozzle category	<u>Step 2</u> spray pattern	<u>Step 3</u> nozzle spec
Steam nozzle	(Select spray pattern)	(Designate spec such as pressure and flow rate)









Step 2: Select inlet direction			
Select	Shape ID	Spray pattern	Description
<input type="radio"/>	SJ		Nozzle with dot-shaped spray pattern section
<input type="radio"/>	FC		Nozzle with solid circular spray pattern section
<input type="radio"/>	HC		Nozzle with hollow, circular, ring-shaped spray pattern section
<input type="radio"/>	O		Nozzle with oval spray pattern section
<input type="radio"/>	SQ		Nozzle with square-shaped spray pattern section
<input type="radio"/>	RS		Injected in transverse direction
<input type="radio"/>	ST		Nozzle for film-shaped injection from slit-shaped orifice
<input checked="" type="radio"/>	S	Nil	
<div style="display: flex; justify-content: space-around;"> Previous page Next page </div>			

Fig.9

Standard search

Search criteria input: STEP 3

(Input general nozzle spec: multiple nozzle model number search)

Search criteria you have entered (click on any of these steps to modify related entry)		
Step 1 nozzle category	Step 2 spray pattern	Step 3 nozzle spec
Steam nozzle		(Designate spec such as pressure and flow rate)

Conversion function set for units
often used for nozzle design

Unit conversion table

Step 3: Enter nozzle spec	
Liquid pressure	<div>43</div> <input type="text"/> <div>Select unit</div> <div>MPa ▼</div> <div>45</div>
Injection fluid flow rate	<div>43</div> <input type="text"/> <div>±</div> <input type="text"/> <div>Select unit</div> <div>ml/min ▼</div> <div>45</div> <div>Standard state</div> <div>Enter search allowable tolerance</div>
Spray angle	<div>43</div> <input type="text"/> <div>±</div> <input type="text"/> <div>°(degrees)</div> <div>44</div> <div>Enter search allowable tolerance</div>
<div>Previous page</div> <div>Reset</div> <div>Search start</div>	
Step 2	

Search result list

47

Unit conversion table

42

46

(SGS content page)

(Search by further narrowing search result)


Fig.11

Standard search

Search result detail list

(General nozzle spec input: multiple nozzle model number search)

Search criteria you have entered
(Click on any of these steps to modify related entry)

Step 1 nozzle category	Step 2 spray pattern	Step 3 nozzle spec
Steam nozzle		Liquid pressure: 2.0 MPa Liquid flow rate: 200.1 ml/min Spray angle: 60 ± 0.1°



Conversion function is set for unit
often used for nozzle design

Unit conversion table

Search result detail list	
Manufacture model number	○ ○ ○ ○ ○
Manufacture	△ △ △
Nationality	Japan
Catalog language	
URL	http://www.nozzle-0000.com
Valve function	Absent
Strainer	Absent
SGS classification	Flat nozzle
Product name	Flat nozzle
Orifice material	Stainless steel
Heat resistance temperature	90° C 194° F
Color	
Mounting screw	Re 1/8 Female
Flange type	Absent
Orifice diameter	2.1 mm 0.083 inch
Free passage diameter	2.0 mm 0.079 inch
Weight	0.014 Kg

22 lb ▼

Fig.12

Inlet direction	 <p>Fluid flows in from the rear of nozzle body</p>																																							
Spray pattern	 <p>Flat spray</p>																																							
Pressure, flow rate, spray angle	<div style="border: 1px solid black; padding: 5px;"> <p>Catalog value</p> <p>Pressure-flow rate characteristic table</p> <table border="1"> <tr> <td>Pressure (bar)</td> <td>0.5</td> <td>1.0</td> <td>2.0</td> <td>3.0</td> <td>5.0</td> <td>10.0</td> </tr> <tr> <td>Flow rate (l/min)</td> <td>1.0</td> <td>1.41</td> <td>2.0</td> <td>2.45</td> <td>3.16</td> <td>4.47</td> </tr> </table> <p>Pressure-spray angle characteristic table</p> <table border="1"> <tr> <td>Pressure (bar)</td> <td>2.0</td> </tr> <tr> <td>Spray angle (degree)</td> <td>43</td> </tr> </table> </div> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>Unit conversion value (above catalog value can be converted)</p> <p>Pressure-flow rate characteristic table</p> <table border="1"> <tr> <td>Pressure</td> <td>MPa</td> <td>0.05</td> <td>0.1</td> <td>0.2</td> <td>0.3</td> <td>0.5</td> <td>1.0</td> </tr> <tr> <td>Flow rate</td> <td>l/min</td> <td>1.0</td> <td>1.41</td> <td>2.0</td> <td>2.45</td> <td>3.16</td> <td>4.47</td> </tr> </table> <p>Pressure-spray angle characteristic table</p> <table border="1"> <tr> <td>Pressure</td> <td>MPa</td> <td>2.0</td> </tr> <tr> <td>Spray angle (degree)</td> <td>43</td> </tr> </table> </div>	Pressure (bar)	0.5	1.0	2.0	3.0	5.0	10.0	Flow rate (l/min)	1.0	1.41	2.0	2.45	3.16	4.47	Pressure (bar)	2.0	Spray angle (degree)	43	Pressure	MPa	0.05	0.1	0.2	0.3	0.5	1.0	Flow rate	l/min	1.0	1.41	2.0	2.45	3.16	4.47	Pressure	MPa	2.0	Spray angle (degree)	43
Pressure (bar)	0.5	1.0	2.0	3.0	5.0	10.0																																		
Flow rate (l/min)	1.0	1.41	2.0	2.45	3.16	4.47																																		
Pressure (bar)	2.0																																							
Spray angle (degree)	43																																							
Pressure	MPa	0.05	0.1	0.2	0.3	0.5	1.0																																	
Flow rate	l/min	1.0	1.41	2.0	2.45	3.16	4.47																																	
Pressure	MPa	2.0																																						
Spray angle (degree)	43																																							

Catalog image (page related to retrieved nozzle. Click to enlarge screen.

51

51

Click this button, and mailer with page on display is started, making possible direct inquiry to nozzle manufacture retrieved. Transmission to other than Japanese nozzle manufactures is automatically accompanied by English page corresponding to page on display

52 Attaching mailer start to nozzle manufacture

Previous page

Select "search method" 53

Log-out

(search result list) (Enter search criteria anew) (SGS content page)

Fig.13

Expert search

Search criteria input: STEP 1

(Enter detailed nozzle spec: high-accuracy nozzle model number search)

Proceed from steps 1 to 4 and enter search criteria. With the advance of steps, the contents enter in column "Search criteria you have entered" are displayed. Even in the middle of each step, the process can be returned to preceding steps and enter contents can be changed.

Search criteria you have entered (Click on any of these steps to modify related entry)			
Step 1 nozzle category	Step 2 inlet direction	Step 3 spray pattern	Step 4 nozzle spec
Steam nozzle	(Select inlet direction)	(Select spray pattern)	(Designate pressure, flow rate and other spec)

54

Step 1: Select nozzle category
<p>[Liquid] nozzles Nozzle for spraying liquid such as water or oil exclusively</p> <p>[Liquid + gas] nozzles Nozzle for spraying liquid such as water or chemical and gas such as air or various gases at the same time</p> <p>[Gas] nozzles Nozzle for spraying air or various other gases exclusively</p> <p>[Steam] nozzles Nozzle for spraying steam exclusively</p> <p>[Rotation nozzles] Nozzle having such a mechanism to rotate as a result of the reaction force generated by the discharge of liquid from its orifice</p> <p>[Spray devices] Various devices using nozzle such as humidifier and cleaner</p>

Fig.14

Expert search

Search criteria input: STEP 2

(Input detailed nozzle spec: high-accuracy search of nozzle model number)

54

Search criteria you have entered (Click on any of these steps to modify related entry)			
Step 1 nozzle category	Step 2 inlet direction	Step 3 spray pattern	Step 4 nozzle spec
Steam nozzle	(Select inlet direction)	(Select spray pattern)	(Designate spec such as pressure and flow rate)

Step 2: select inlet direction			
Select	Inlet direction ID	Inlet direction	Description
<input type="radio"/>	A	 ↓	Two types of fluid flow in from the rear of nozzle body
<input type="radio"/>	B	— ↓	Two types of fluid flow in from rear and sides, respectively, of nozzle body
<input type="radio"/>	C	— — ↓	Both two types of fluid flow in from sides of nozzle body
<input type="radio"/>	D	○ ↓	Two types of fluid flow in from the rear of nozzle body and discharged axial to nozzle body
<input type="radio"/>	E	○ — ↓	Two types of fluid flow in from the rear and sides of nozzle body, respectively, and discharged axial to nozzle body
<input type="radio"/>	L	— — ↓	Fluid flows in from the rear of nozzle body and discharged axial to nozzle body
<input checked="" type="radio"/>	S		Nil

Previous page

Step 1.

Next page

Step 2


Fig.15

Expert search








Search criteria input: STEP 3

54

(Input detailed nozzle spec: high-accuracy search of nozzle model number)

Search criteria you have entered (Click on any of these steps to modify related entry)			
<u>Step 1</u> nozzle category	<u>Step 2</u> inlet direction	<u>Step 3</u> spray pattern	<u>Step 4</u> nozzle spec
Steam nozzle		(Select spray pattern)	(Designate spec such as pressure and flow rate)

Step 2: select spray pattern

Select	Shape ID	Spray pattern	Description
<input type="radio"/>	SJ		Nozzle with dot-shaped spray pattern section
<input type="radio"/>	FC		Nozzle with solid circle spray pattern section
<input type="radio"/>	HC		Nozzle with hollow, circular, ring-shaped spray pattern section
<input type="radio"/>	O		Nozzle with oval spray pattern section
<input type="radio"/>	SQ		Nozzle with square-shaped spray pattern section
<input type="radio"/>	RS		Discharged in transverse direction
<input type="radio"/>	ST		Nozzle for film-shaped injection from slit-shaped orifice
<input checked="" type="radio"/>	S		Nil

Previous page


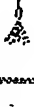
Next page

Fig.16

Expert search

Search criteria input: STEP 4

(Input detailed nozzle spec: high-accuracy search of nozzle model number) 54

Search criteria you have entered (Click on any of these steps to modify related entry)			
Step 1 nozzle category	Step 2 inlet direction	Step 3 spray pattern	Step 4 nozzle spec
Steam nozzle			(Designate spec such as pressure and flow rate)

Conversion function of unit often
used for nozzle design is set

Unit conversion table

Step 4: Enter nozzle spec

1. Manufacture
2. w/ valve function ☒ Not designated, ☐ With, ☐ Without
3. w/ strainer ☒ Not designated, ☐ With, ☐ Without
4. Orifice material
5. Mounting screw

Standard:

Size:

Male/female: ☒ Not designated, ☐ Male, ☐ Female
6. Free passage diameter

mm

(Select unit)
7. Gas pressure

MPa

(Select unit)
8. Injection fluid flow rate

± ml/min

(Enter search allowable tolerance).

Standard state
9. Spray angle

± ° (degree)

(Enter search allowable tolerance).

Step 3

Fig.17

Nozzle spec search

(Input nozzle model number: nozzle spec search)

- ◎ Input full model number.
Ambiguous search function may make search
possible by inputting only a part of model number

Nozzle model number

Or

- ◎ Search is possible also by inputting system code

System code

Fig.18

Similar nozzle search

(Input nozzle model number: similar nozzle search)

Designate reference nozzle.

Ⓒ Input full model number

(Take care that unless model number is completely coincident, similar nozzle cannot be retrieved)

Nozzle model number

Or

Ⓒ Search is also possible by inputting system code

System code

Ⓒ Designate reference pressure

Unit

Designate allowable tolerance for similar nozzle search

Ⓒ Designate flow rate allowable tolerance

☐ $\pm 0\%$ ☐ $\pm 5\%$ ☐ $\pm 10\%$ ☐ $\pm 15\%$ ☐ $\pm 20\%$

☐ Others : + %
- %

Ⓒ Designate angle allowable tolerance

☐ $\pm 0\%$ ☐ $\pm 5\%$ ☐ $\pm 10\%$ ☐ $\pm 15\%$ ☐ $\pm 20\%$

☐ Others : + %
- %

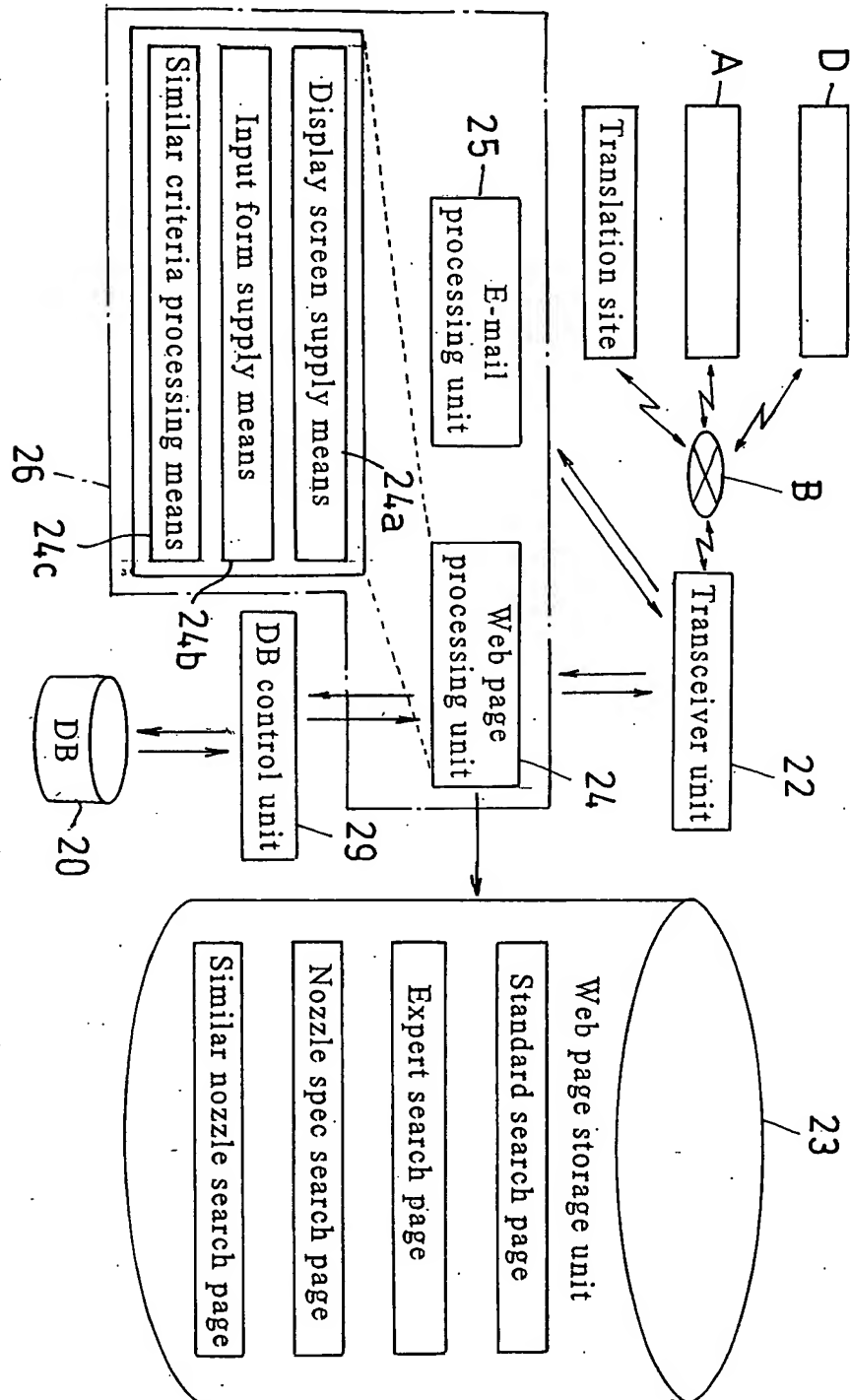


Fig.19

Fig.20

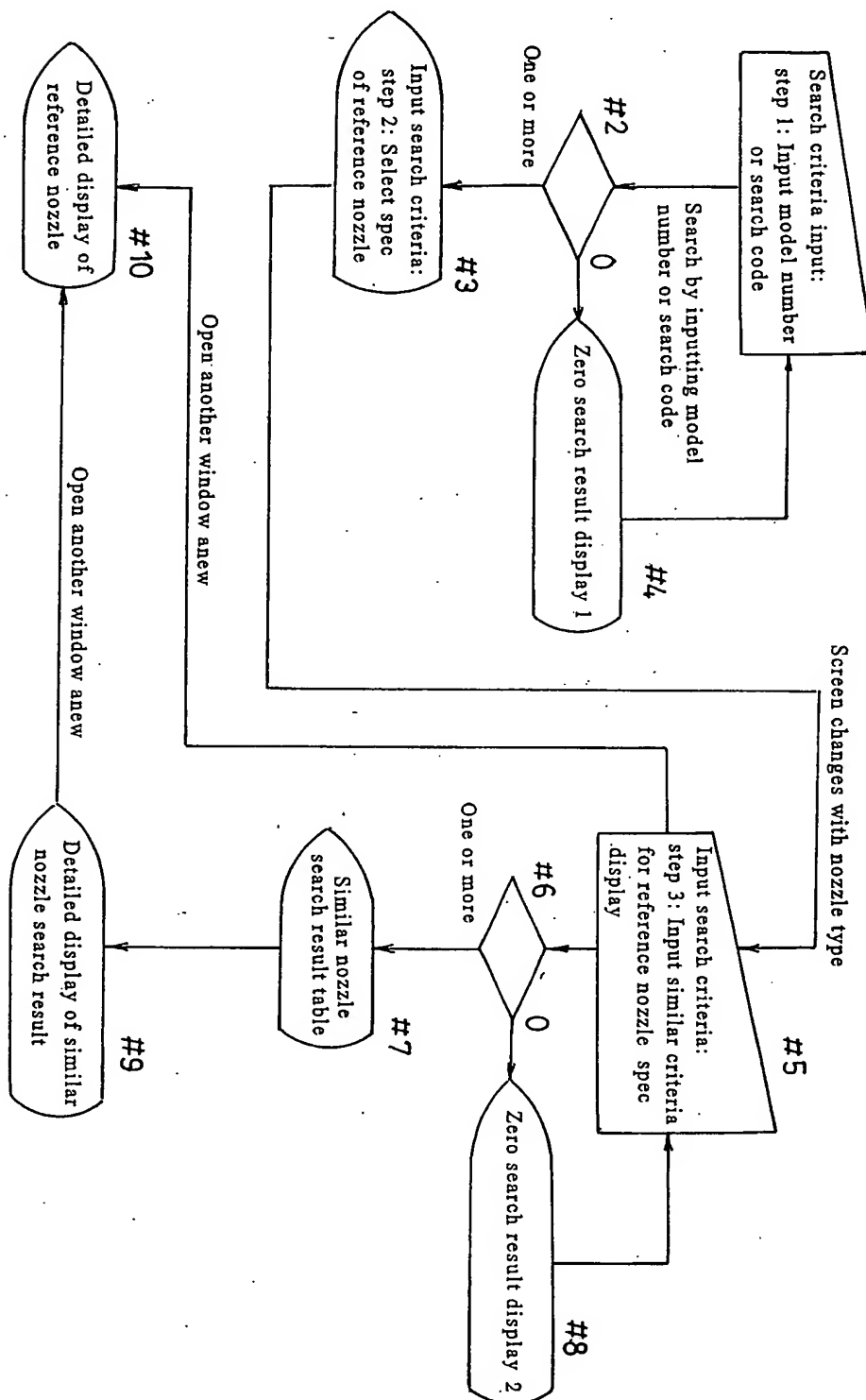


Fig.21

Similar nozzle search

Search criteria input: STEP 1

Page for inputting nozzle model number providing reference for similar nozzle search.

Begin here for explanation of search process

Step 1: input reference nozzle model number

(input nozzle model number or search code number below)

Correctly input full model number of reference nozzle for similar nozzle search

Input numeral, character or code of a part constituting nozzle full model number as a key word, and then full nozzle model number including them and spec can be retrieved (for more detail, click here)

Input nozzle model number Search start

60

61

Input possible also with reference nozzle search code number (input 6-digit numeral. Ex: 123-456)

Input search code number:SGS Search start

60

61

(Notes)

1. Nozzle model number is mainly configured of nozzle spec including mounting size, material, flow rate, spray angle and spray pattern converted into key word of numeral, character and code. Key word and structure are varied from one nozzle manufacture to another.

1. In the case where the model number you have entered is incorrect or a part of full model number is entered as search criteria by key word, all nozzle model numbers including the key word are extracted. Therefore, a plurality of nozzle manufactures and a variety of types of nozzles may be displayed at the same time in "search result list".

Fig.22

Similar nozzle search

Log-out (to content page)
Select search method

Search criteria input: STEP 2

Page for selecting reference nozzle spec
Begin here for explanation of search procedure

Reference nozzle you have entered	
Nozzle model number	ABC
Search code number	

Notice on zero search result

The nozzle model number or nozzle spec of the contents you have entered as search criteria are not registered in DB of this system and therefore cannot be retrieved. Search again by changing search criteria, or confirm the data base contents by "largest DB in nozzle history" in the content page.

Previous page

Similar nozzle search

Log-out (to content page)
Select search method

Reference nozzle you have entered	
Nozzle model number	ABC
Search code number	

Unit conversion table

[illegible]

Fig. 24

Similar nozzle search
Search criteria input: STEP 3
Page for designating similar nozzle search criteria. Begin here for
explanation of search procedure
Log-out (to content page)
Select search method

This "similar nozzle search" makes it possible to select a similar item from reference nozzle spec designated by you, and retrieve nozzle of high similarity level. (The contents selected by you in "similar nozzle search criteria" column in the table below make up the "definition of similar nozzle" desired by you. Also, please note that the correct name of the nozzle retrieved based on this definition is "similar nozzle defined by you", and not a generally called similar nozzle.)

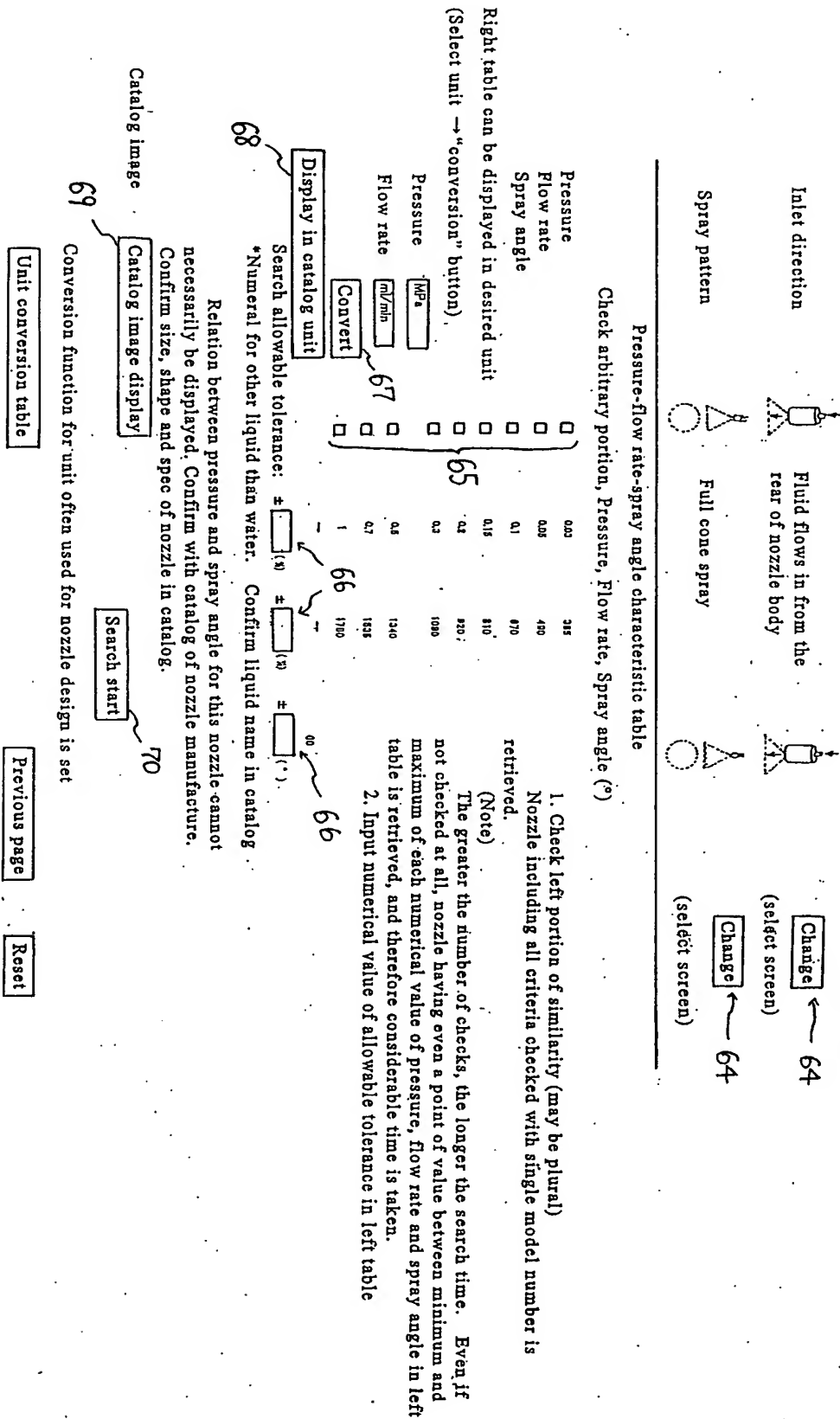
Reference nozzle you have entered	
Nozzle model number	BJM * 20075 303
Search code number	

Step 3: Designate criteria for retrieving similar nozzle

Reference nozzle spec (Spec of nozzle model number you have entered)

Nozzle model number	0000A	Similar nozzle search criteria (select similar item from left spec)
Search code number	SOS 478-666	
Product name, Atomizing nozzle, small injection full cone BJMJ		
Nozzle category,	[Fluid] nozzle	[Fluid] nozzles
Manufacture	0000	[Not designated] ▼
Valve function,	Yes	<input type="radio"/> Not designated
Strainer,	No	<input type="radio"/> Yes, No
Orifice material,	Stainless steel	<input type="radio"/> Not designated
		Standard
		Size
		<input type="radio"/> Not designated
		<input type="radio"/> Screw type,
		Male/female, <input type="radio"/> Male
		<input type="radio"/> Female
		<input type="radio"/> Flange type, Flange size, [Not designated] ▼
Mounting,	screw, Rc, 1/8, Female	

Fig.25

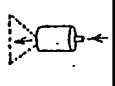
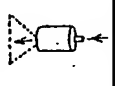



10/539673

Fig. 26

Similar nozzle search
Search result list
Log-out (to content page)
Select search method

Search result is displayed for similar nozzle search criteria selected by you.
Begin here for explanation of search procedure

Similar nozzle search criteria you have entered																		
Nozzle category	Liquid nozzle			<div>Detailed display of reference nozzle</div> <div>Pressure-flow rate-spray angle characteristic table</div> <table border="1"> <thead> <tr> <th>Pressure (bar)</th> <th>Flow rate (l/min)</th> <th>Spray angle (°)</th> </tr> </thead> <tbody> <tr> <td>70</td> <td>13.1</td> <td>18</td> </tr> <tr> <td>±10 (0)</td> <td>±10 (0)</td> <td>±10 (0)</td> </tr> </tbody> </table>						Pressure (bar)	Flow rate (l/min)	Spray angle (°)	70	13.1	18	±10 (0)	±10 (0)	±10 (0)
Pressure (bar)	Flow rate (l/min)	Spray angle (°)																
70	13.1	18																
±10 (0)	±10 (0)	±10 (0)																
Manufacture	Not designated																	
Valve function	Not designated																	
Strainer	Not designated																	
Orifice material	Tungsten carbide																	
Mounting	Screw type NPT or BSPT 1/4 male																	
Inlet direction																		
Spray pattern																		



Search result list									
<div>Convenient functions:</div> <div>Clicking search code number, the detail and catalog image of the particular nozzle are displayed.</div> <div>Select display sequence of each column with rearrange button ▼.</div> <div>7/1</div> <div>Of one search item, first one is displayed.</div> <div>unit conversion table</div> <div>Conversion function for unit often used for nozzle design is set</div>									
<div>Rearrange: Search code number <input type="text"/> Ascending order <input type="text"/> Go <input type="button" value="Go"/></div>									
No.	Search code number	Manufacture name	Nationality	Catalog language	Manufacture model number	Orifice material	Mounting, standard size, male or female	Valve	Strainer
1	SGS 531-573	OOO	JPN	ja	OOOXX	Tungsten carbide	NPT or BSPT 1/4 male	—	—

Search result page

Fig.27

Similar nozzle search
Detailed search result display

Detailed spec of similar nozzle is on display.
Begin here for explanation of search procedure

Similar nozzle search criteria you have entered		Reference nozzle detail display
Nozzle category	Nozzle for liquid	Pressure-flow rate-spray angle characteristic table
Manufacture	Not designated	
Valve function	Not designated	
Strainer	Not designated	
Orifice material	Tungsten carbide	
Mounting	Screw type NPT or BSPT 1/4 male	
Inlet direction		
Spray pattern		

Pressure (bar)	Flow rate (l/min)	Spray angle (°)
70	15.2	
—	—	15
±10 (%)	±10 (%)	±10 (%)

Search result detail display	
Search code number SGS 531-973	Unit conversion table
Nozzle category: [Liquid nozzle] nozzle	Conversion function of unit often used for valve design is set
SGS category name: Flat nozzle	
Manufacture	0000
Nationality	JPN
URL	http://www.000.co.jp/
Catalog language	jpn
Product name	Flat spray nozzle WashJet
Manufacture model number	B1/4MEG-SSTC-1508
Valve function	No
Strainer	No
Orifice material	Tungsten carbide

Fig.28

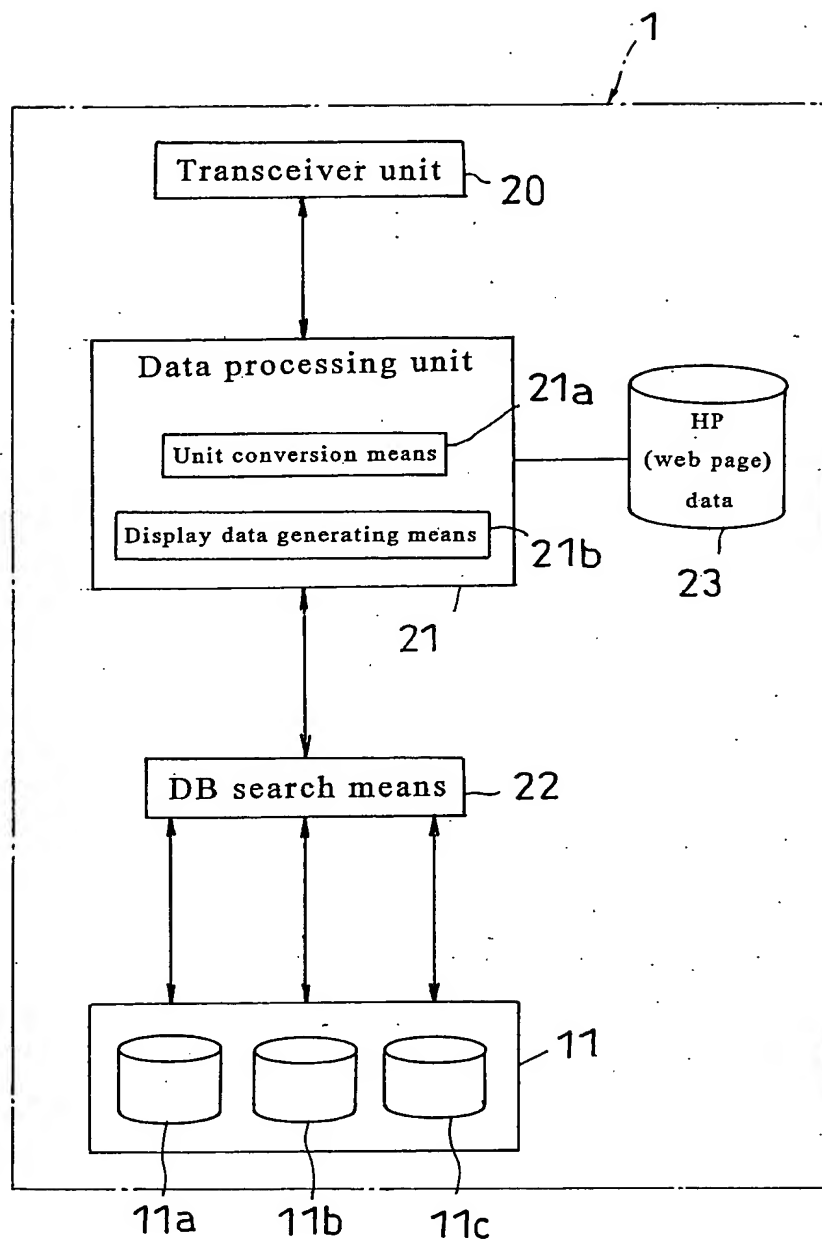


Fig.29

Search result list

Convenient functions:
By clicking model number, nozzle detail and catalog image are displayed
One-click conversion is possible by "unit select" button ▼ in pressure, flow rate column
Display order of each column can be selected by rearrange button ▼

Rearrange: Ascending order 33 Of 0000 items retrieved, 1 to 20 items on display

No	NRS code	Nationality	Catalog language	Manufacture model number Click and detail displayed	30a Pressure		30b Conversion		31a Flow rate		31b Conversion		Spray angle (°)	Material	Screw			Valve	Filter
					Catalog value	Unit	Catalog value	Unit select	Catalog value	Unit	Catalog value	Unit select			Standard	Size	Male or female		
1	A	U.S.		000XXX	2.0	bar	0.2		2.0	l/min	1.9		65	Brass	NPT or BSPT	1/8	Male		
2	B	Britain		0X000X	2.0	bar	0.2		2.0	l/min	1.9		65	Brass	BSPT	1/8	Male		
3	C	U.S.		AAAXX	2.0	psi	0.7		2.0	GPH	1.9		80	Stainless steel	NPT	1/8	Male	Yes	
14	D	Japan		00XXX0	2.0	kg/cm ²	0.2		2.0	l/min	1.7		60	Brass	R	1/8	Male		
15	E	Japan		AXA	2.0	kg/cm ²	0.2		2.0	l/min	4.2		70	Brass	R	1/8	Male		
16	F	Japan		AXAA	2.0	bar	0.2		2.0	l/min	1.8		65	Brass	R	1/8	Male		
17	G	Japan		0X000X	2.0	bar	0.2		2.0	l/min	1.8		65	Brass	R	1/8	Male		
18	H	Japan		0X00	2.0	Mpa	0.2		2	l/min	2.4		65	Brass	R	1/4	Male		
19	I	Japan		00X	2.0	kg/cm ²	0.2		2	l/min	1.7		60	Brass	R	3/8	Male		
20	J	Japan		00AA00	2.0	Mpa	0.7		2	l/min	1.2		80	Stainless steel	R	1/4	Female		

Search result page 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Return | To next | 32

Fig.30

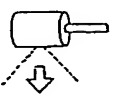
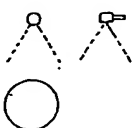
Search result detail display	
NRS code	
Manufacture model number	○○○○
Manufacture	□□□□
Nationality	Germany
Catalog language	
URL	http://www.AAA.com
Valve function	No
Filter	No
General nozzle name	Full cone nozzle
Manufacture name	Full cone nozzle
Main material	Plastic
Heat resistance temperature	90℃ 194F
Color	
Mounting screw	NPT 3/8 Male
Flange type	No
Orifice dia.	2.1mm 0.083inch
Free passage dia.	2.0mm 0.079inch
Weight	0.014Kg 2.2 lb ▼
Inlet direction	 Flows in from the rear of nozzle body and discharged axial to nozzle body
Spray pattern	 Full cone spray

Fig.31

Pressure, flow rate, spray angle	Catalog value														
	Pressure-flow rate characteristic table														
	<table border="1"> <tr> <td>Pressure (Mpa)</td> <td>0.5</td> <td>1.0</td> <td>2.0</td> <td>3.0</td> <td>5.0</td> <td>10.0</td> </tr> <tr> <td>Flow rate (ml/min)</td> <td>1.0</td> <td>1.41</td> <td>2.0</td> <td>2.45</td> <td>3.16</td> <td>4.47</td> </tr> </table>	Pressure (Mpa)	0.5	1.0	2.0	3.0	5.0	10.0	Flow rate (ml/min)	1.0	1.41	2.0	2.45	3.16	4.47
	Pressure (Mpa)	0.5	1.0	2.0	3.0	5.0	10.0								
	Flow rate (ml/min)	1.0	1.41	2.0	2.45	3.16	4.47								
	Pressure-spray angle characteristic table														
<table border="1"> <tr> <td>Pressure (Mpa)</td> <td>2.0</td> </tr> <tr> <td>Spray angle (degree)</td> <td>119</td> </tr> </table>	Pressure (Mpa)	2.0	Spray angle (degree)	119											
Pressure (Mpa)	2.0														
Spray angle (degree)	119														
Unit conversion value (above catalog value can be converted)															
Pressure-flow rate characteristic table															
<table border="1"> <tr> <td>Flow rate <input type="text" value="Mpa"/></td> <td>0.5</td> <td>1.0</td> <td>2.0</td> <td>3.0</td> <td>5.0</td> <td>10.0</td> </tr> <tr> <td>Pressure <input type="text" value="l/min"/></td> <td>1.0</td> <td>1.41</td> <td>2.0</td> <td>2.45</td> <td>3.16</td> <td>4.47</td> </tr> </table>	Flow rate <input type="text" value="Mpa"/>	0.5	1.0	2.0	3.0	5.0	10.0	Pressure <input type="text" value="l/min"/>	1.0	1.41	2.0	2.45	3.16	4.47	
Flow rate <input type="text" value="Mpa"/>	0.5	1.0	2.0	3.0	5.0	10.0									
Pressure <input type="text" value="l/min"/>	1.0	1.41	2.0	2.45	3.16	4.47									
Pressure-spray angle characteristic table															
<table border="1"> <tr> <td>Pressure <input type="text" value="Mpa"/></td> <td>2.0</td> </tr> <tr> <td>Spray angle</td> <td>119</td> </tr> </table>	Pressure <input type="text" value="Mpa"/>	2.0	Spray angle	119											
Pressure <input type="text" value="Mpa"/>	2.0														
Spray angle	119														

34

35

<table border="1"> <tr> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> </tr> <tr> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> </tr> <tr> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> </tr> </table>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<table border="1"> <tr> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> </tr> <tr> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> </tr> <tr> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> </tr> </table>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<table border="1"> <tr> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> </tr> <tr> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> </tr> <tr> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> </tr> </table>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
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<input type="text"/>	<input type="text"/>	<input type="text"/>																														

(search result list)

(Input search criteria anew)

Fig.32

Conversion page

Pressure			
Before conversion		After conversion	
Value	Unit	Value	Unit
<input type="text"/>	<input type="text"/> ▼	<input type="text"/>	<input type="text"/> ▼

Flow rate			
Before conversion		After conversion	
Value	Unit	Value	Unit
<input type="text"/>	<input type="text"/> ▼	<input type="text"/>	<input type="text"/> ▼

Specific gravity		
(1) Flow rate of liquid actually sprayed can be converted to water flow rate		
Flow rate of liquid sprayed	Specific gravity of liquid sprayed	Flow rate in terms of water
<input type="text"/>	<input type="text"/> (g/cm ³) ⇒	<input type="text"/>
(2) Water flow rate can be converted to flow rate of actually sprayed liquid		
Flow rate of liquid sprayed	Specific gravity of liquid sprayed	Flow rate in terms of water
<input type="text"/>	<input type="text"/> (g/cm ³) ⇐	<input type="text"/>

Weight			
Before conversion		After conversion	
Value	Unit	Value	Unit
<input type="text"/>	<input type="text"/> ▼	<input type="text"/>	<input type="text"/> ▼

Length			
Before conversion		After conversion	
Value	Unit	Value	Unit
<input type="text"/>	<input type="text"/> ▼	<input type="text"/>	<input type="text"/> ▼

Area			
Before conversion		After conversion	
Value	Unit	Value	Unit
<input type="text"/>	<input type="text"/> ▼	<input type="text"/>	<input type="text"/> ▼

Viscosity: *Converted with specific gravity as 1 (originally, relation holds that "viscosity = dynamic viscosity x specific gravity")			
Before conversion		After conversion	
Value	Unit	Value	Unit
<input type="text"/>	<input type="text"/> ▼	<input type="text"/>	<input type="text"/> ▼

Fig 33

Model number	Corresponding orifice dia. (mm)	Flow rate (L/min)											Spray angle			
		Pressure (MPa)											Pressure (MPa)			
		0.03	0.1	0.2	0.3	0.4	0.5	0.6	0.7	1.0	2.0	3.5	0.15	0.3	0.6	1.4
A B C D ...	0.66	0.12	0.23	0.32	0.39	0.46	0.51	0.56	0.60	0.72	7.0	7.3	94°	110°	121°	124°
	0.79	0.19	0.34	0.48	0.59	0.68	0.76	0.84	0.90	1.1	1.5	2.0	97°	110°	121°	124°
	0.91	0.25	0.46	0.64	0.79	0.91	1.0	1.1	1.2	1.4	2.0	2.7	98°	110°	120°	123°
	1.1	0.37	0.68	0.97	1.2	1.4	1.5	1.7	1.8	2.2	3.1	4.0	99°	110°	120°	123°
	1.3	0.50	0.91	1.3	1.6	1.8	2.0	2.2	2.4	2.9	4.1	5.4	100°	110°	119°	122°

(A) 101 (B) (C)

100

100

Fig 34

(a)

Pressure	1	3	5	7	10	15
Flow rate	2	3.5	4.5	5.3	6.3	7.7

Pressure	3	5	10
Spray angle	45	50	55

(b)

No	Pressure	Flow rate	Spray angle
1	3	3.5	45
2	3	3.5	50
3	5	4.5	45
4	5	4.5	50
5	7	5.3	45
6	7	5.3	50

(c)

No	Pressure	Flow rate	Spray angle
	7	5.3	50 (Pressure5)

Fig 35

Pressure	1	3	5	10	15
Flow rate	2	3.5	4.5	6.3	7.7
Spray angle		50		55	

Fig 36

Pressure	1	3	5	10	15
Flow rate	2	3.5	4.5	6.3	7.7
Spray angle			50		

Fig 37

(a)

Pressure	1	3	5	10	15
Flow rate	2	3.5	4.5	6.3	7.7
Spray angle	* 50	50	* 50	55	* 55

(b)

Pressure	1	3	6.5	10	15
Flow rate	2	3.5	4.5	6.3	7.7
Spray angle	* 50	50	* 50	55	* 55

(c)

Pressure	1	3	7	10	15
Flow rate	2	3.5	4.5	6.3	7.7
Spray angle	* 50	50	* 55	55	* 55

Fig 38

Pressure	1	3	4.5	7	10	15
Flow rate	2	3.5	4.5	6.3	6.3	7.7
Spray angle	* 50	50	* 50	* 55	55	* 55

Fig 39

Pressure	1	3	5	10	15
Flow rate	2	3.5	4.5	6.3	7.7
Spray angle	* 50	* 50	50	* 50	* 50

Fig 40

Pressure	1	3	5	10	15
Flow rate	2	3.5	4.5	6.3	7.7
Spray angle	* 50	* 50	* 50	* 50	* 50

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Fig.41

No	Liquid pressure	Gas pressure	Liquid amount	Gas amount	Angle	Addendum
1	0.02	0.02	2.8	25.2	33	
2	0.02	0.035	2.8	26.3	*33	In the presence of a plurality of same liquid pressure 0.02, angular value for nearest gas pressure 0.02 is employed
3	0.02	0.07	2.8	31.2	*34	In the presence of a plurality of same liquid pressure 0.02, angular value for nearest gas pressure 0.105 is employed
4	0.02	0.105	2.8	39.6	34	
5	0.03	0.035	3.5	26.3	*37	In the absence of same liquid pressure, angular value for near liquid pressure 0.035 is employed
6	0.03	0.07	3.5	31.2	*37	In the absence of same liquid pressure, angular value for near liquid pressure 0.035 is employed
7	0.03	0.105	3.5	39.6	*37	In the absence of same liquid pressure, angular value for near liquid pressure 0.035 is employed
8	0.03	0.14	3.5	45.3	*37	In the absence of same liquid pressure, angular value for near liquid pressure 0.035 is employed
9	0.035	0.14			37	
10	0.07	0.07	5.3	31.2	*42	Angular value for same liquid pressure 0.07 is employed
11	0.07	0.105	5.3	39.6	*42	Angular value for same liquid pressure 0.07 is employed
12	0.07	0.14	5.3	45.3	*42	Angular value for same liquid pressure 0.07 is employed
13	0.07	0.175	5.3	53.8	42	
14	0.14	0.14	7.8	45.3	42	
15	0.14	0.175	7.8	53.8	*42	In the presence of a plurality of same liquid pressure 0.14, angular value for nearest gas pressure 0.14 is employed
16	0.14	0.21	7.8	59.5	*42	In the presence of a plurality of same liquid pressure 0.14 and two nearest gas pressures 0.14 and 0.28, the smaller angular value is employed
17	0.14	0.28	7.8	73.6	47	

Fig.42

Search result list

Convenient functions:

By clicking SGS code number, nozzle detail and catalog image are displayed

Display order in each column can be selected by rearrange ▼ button.

Display order in each column can be selected by rearrange ▼ button.
Conversion function for unit often used for nozzle design is set

Unit conversion table

Table below displayed by unified unit conversion in pressure and flow rate

Pressure, Flow rate,

Rearrange:

No.	SGS Code number Display detail by click ▼	Manufacture name	Nationality	Catalog language	Manufacture model number	Pressure	Flow rate	Spray angle (at pressure)
1		△△△			-----	2.0 bar	1.9 l/min	65° (at 2.0bar)
2		□□□□			-----	2.0 kgf/cm2	1.9 l/min	65° (at 2.0kgf/cm2)
3		○○○○			-----	100 psi	30.0 GPH	80° (at100psi)
4						2.0 bar	2 l/min	43° *1 (at 2.0bar)
5						2.0 bar	2 *3 l/min	43° *1 *3 (at 2.0bar)
6						1.8 bar	2 l/min	43° *2 (at 2.0bar)
7						2.0 bar	1.9 l/min	65° (at 2.0bar)
8						1.8 kgf/cm2	1.9 l/min	65° *2 (at 2.0kgf/cm2)
9						100 psi	30.0 GPH	80° (at100psi)
10						1.8 bar	2 l/min	43° *1 *2 (at2.0bar)
11						2.0 bar	2 *3 l/min	43° *1 *3 (at2.0bar)
12						2.0 bar	2 l/min	43° (at 2.0bar)
13						100 psi	30.0 GPH	80° (at100psi)
14						2.0 bar	2 l/min	43° *1 (at 2.0bar)
15						2.0 bar	2 l/min	43° *1 (at 2.0bar)

(*1) Nozzle manufacture catalog describes spray distance and spray width, which are displayed for reference by simple angular calculation. For more detail, see nozzle manufacture catalog.

(*2) Nozzle manufacture catalog does not describe spray angle for pressure input as search criteria, and spray angle based on most informative catalog pressure description is displayed. For more detail, see nozzle manufacture catalog.

(*3) Flow rate or spray angle for spraying other liquid than water is indicated. For more detail, see nozzle manufacture catalog.

(Notes)

Nozzle spec including model number, pressure and flow rate in search result list are indicated as described in catalog printed by nozzle manufacture. To prevent nozzle selection trouble, each customer confirm directly with each nozzle manufacture-for contents of printed catalog and retrieved nozzle. We take no responsibility for search result.

Fig.43

Search result list										
<p>Convenient functions:</p> <p>By clicking SGS code number, nozzle detail and catalog image are displayed</p> <p>Display order in each column can be selected by rearrange ▼ button.</p> <p>Display order in each column can be selected by rearrange ▼ button.</p> <p>Conversion function for unit often used for nozzle design is set</p>										
<p align="right">Unit conversion table</p>										
<p>Table below displayed by unified unit conversion in pressure and flow rate</p>										
<p>Pw: Liquid Pressure. <input type="text" value="kgf/cm2"/> Pa: Gas pressure <input type="text" value="kgf/cm2"/></p> <p>Qw: Liquid Flow rate. <input type="text" value="ml/min"/> Qg: Gas Flow rate. <input type="text" value="ml/min"/></p> <p align="right"><input type="button" value="Convert and display"/></p>										
<p>Rearrange: <input type="text" value="manufacture name"/> <input type="text" value="ascending order"/> <input type="button" value="GO"/></p>										
No.	SGS Code number Display detail by click ▼	Manufacture name	Nationality	Catalog language	Manufacture model number	Pressure Flow rate Spray angle				
						Pw	Pa	Qw	Qg	Spray angle (at Pw, Pa)
1						2.0 bar	2.0 bar	1.0 l/min	1.0 l/min	85° (at Pw 2.0bar, Pa 2.0bar)
2						2.0 kgf/cm2	2.0 kgf/cm2	1.0 l/min	1.0 l/min	85° (at Pw 2.0kgf/cm2, Pa 2.0kgf/cm2)
3						100 psi	100 psi	30.0 GPH	30.0 GPH	80° (at Pw 100psi, Pa 100psi)
4						2.0 bar	2.0 bar	2 l/min	2 l/min	45° (at Pw 2.0bar, Pa 2.0bar)
5						2.0 bar	2.0 bar	2.45 l/min	2 l/min	45° (at Pw 2.0bar, Pa 2.0bar)
6						1.0 bar	2.0 bar	2 l/min	2 l/min	45° (at Pw 2.0bar, Pa 2.0bar)
7						1.0 bar	2.0 bar	1.0 l/min	1.0 l/min	85° (at Pw 2.0bar, Pa 2.0bar)
8						2.0 kgf/cm2	2.0 kgf/cm2	1.0 l/min	1.0 l/min	85° (at Pw 2.0kgf/cm2, Pa 2.0kgf/cm2)
9						100 psi	100 psi	30.0 GPH	30.0 GPH	80° (at Pw 100psi, Pa 100psi)

(*1) Nozzle manufacture catalog describes spray distance and spray width, which are displayed for reference by simple angular calculation. For more detail, see nozzle manufacture catalog.

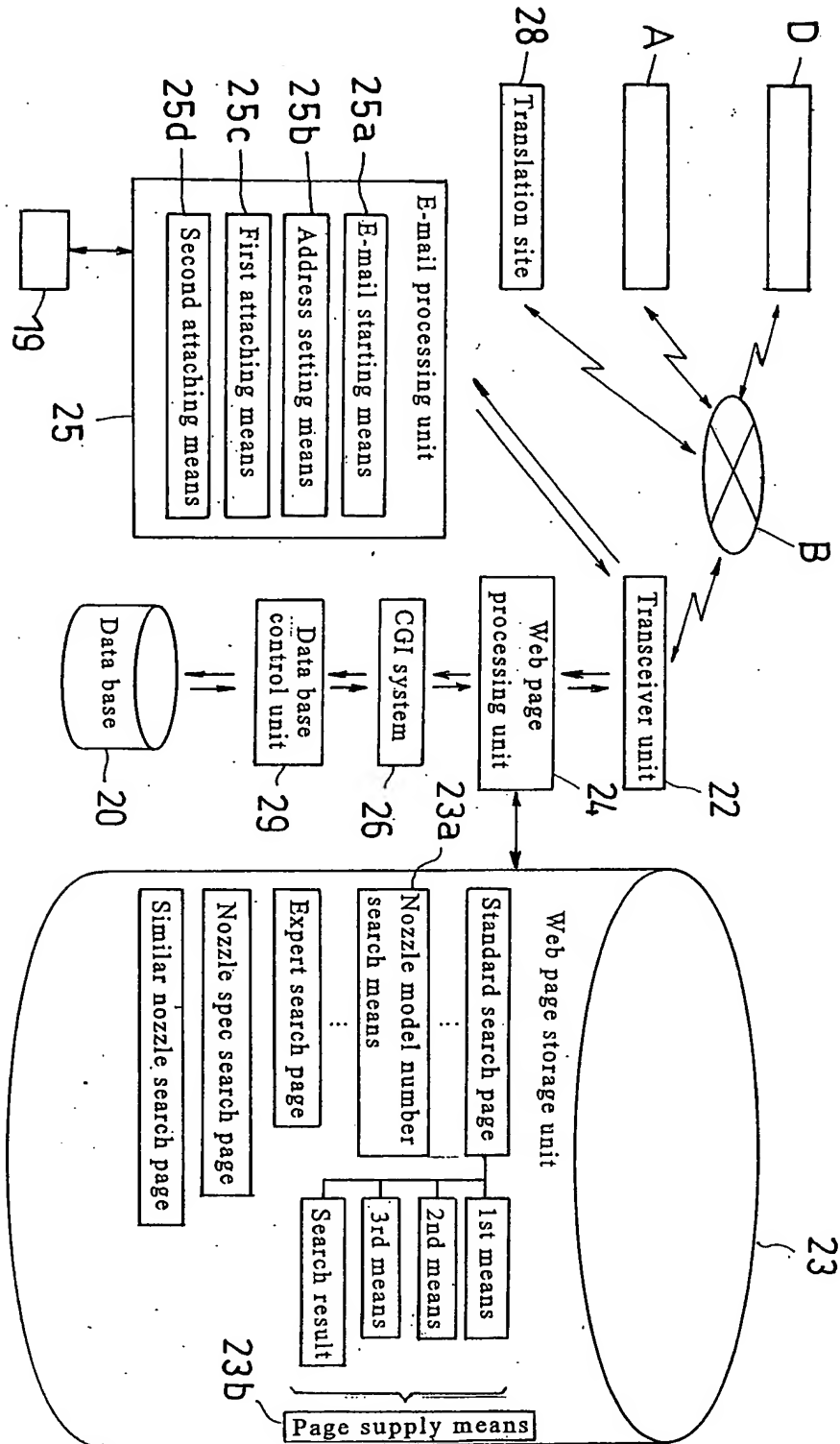
(*2) Nozzle manufacture catalog does not describe spray angle for pressure input as search criteria, and spray angle based on most informative catalog pressure description is displayed. For more detail, see nozzle manufacture catalog.

(*3) Flow rate or spray angle for spraying other liquid than water is indicated. For more detail, see nozzle manufacture catalog.

(Notes)

Nozzle spec including model number, pressure and flow rate in search result list are indicated as described in catalog printed by nozzle manufacture. To prevent nozzle selection trouble, each customer confirms directly with each nozzle manufacture for contents of printed catalog and retrieved nozzle. We take no responsibility for search result.

Fig. 44

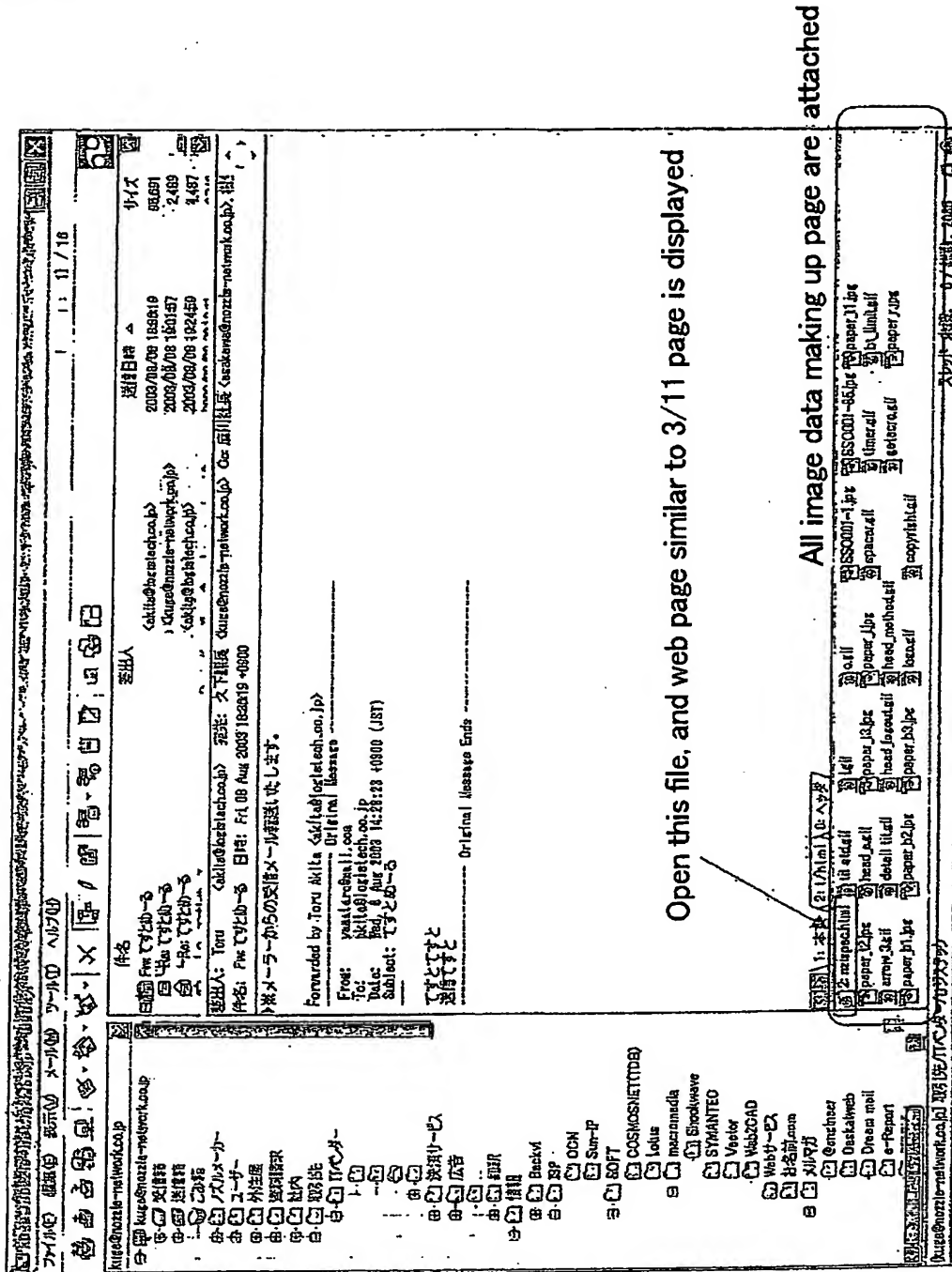


[illegible]

Fig 46

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Fig 47



All image data making up page are attached

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page is displayed

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The document is a technical report or manual in Japanese. It contains several sections of text, including a title page, a table of contents, and a main body of text. The table of contents lists various sections and their corresponding page numbers. The main body of text includes a detailed description of a project or system, with a large table containing numerical data. There are also some diagrams and illustrations, including a small map or diagram of a road or path. The document is written in a formal, technical style.

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Main Body Text:

1. はじめに

2. 概要

3. 仕様

4. 構成

5. 動作

6. 試験

7. 結論

8. 参考文献

9. 謝辞

10. 付録

Table:

項目	値
1. 1	1.1
1. 2	1.2
1. 3	1.3
1. 4	1.4
1. 5	1.5
1. 6	1.6
1. 7	1.7
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1. 99	1.99
1. 100	1.100

Diagram:

The diagram shows a road or path with a curve. It is labeled with various numbers and letters, indicating different sections or points along the route. The diagram is a technical drawing, likely used to illustrate a specific feature or component of the system being described.

Fig.52

List of mailer attaching method and practicability evaluation

	Comparative example 1	Comparative example 2	Comparative example 3	This invention
Attached file	HTML file	HTML file Page constituting image data Catalog thumbnail image	HTML file Catalog thumbnail image	HTML file Catalog thumbnail image
Problem	Outlook Express Server access required to display image	Display abnormal Many image files attached Attached file cannot be opened	Display abnormal Many image files attached Attached file cannot be opened	No problem
Becky!	Server access required to display image	Many image files attached	Many image files attached	No problem
Practicability	X	X	X	O
Reference drawing	Fig. 13	Fig. 14, 15	Fig. 16, 17	Fig. 18, 19

Fig.53

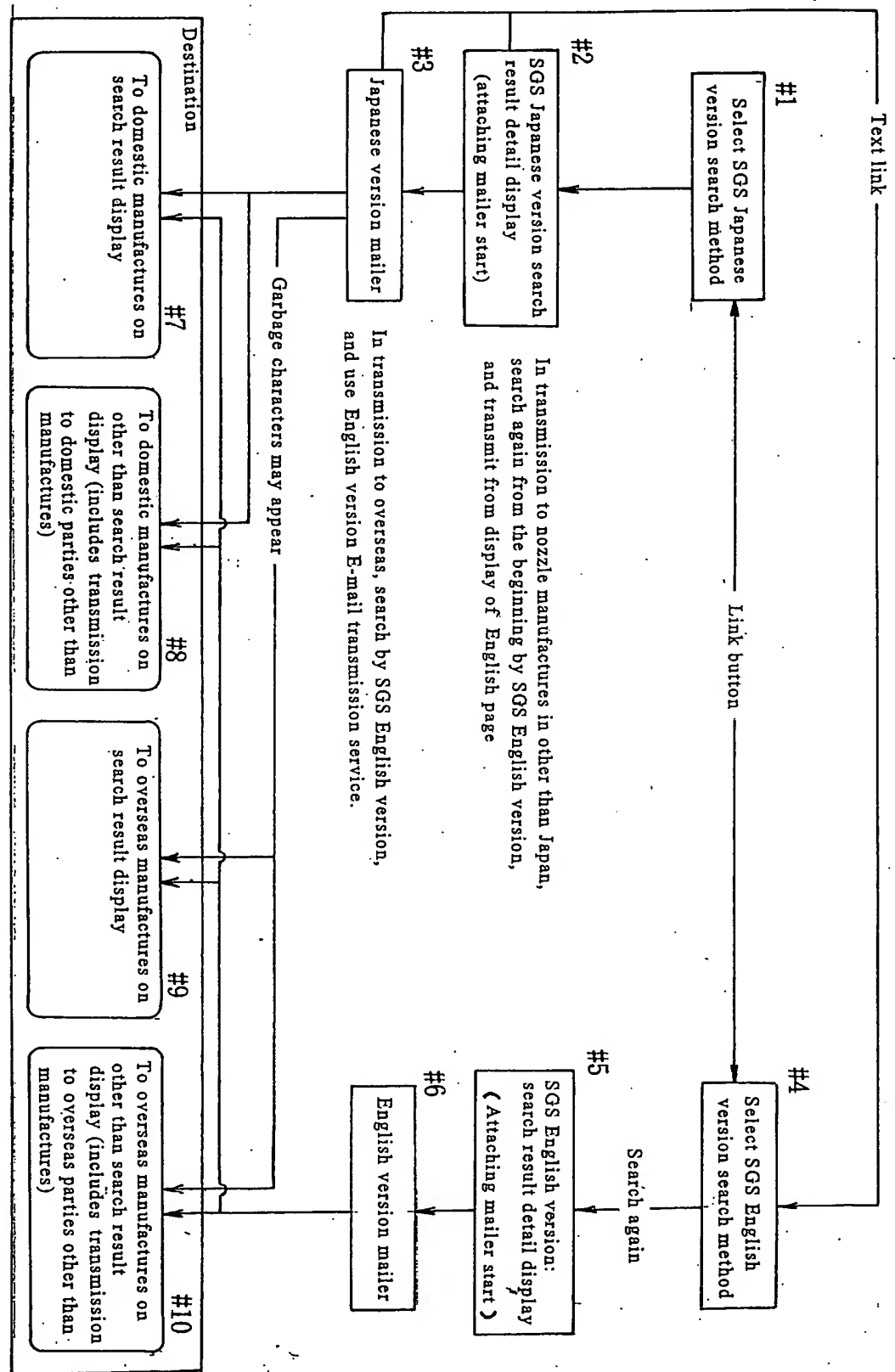


Fig.54

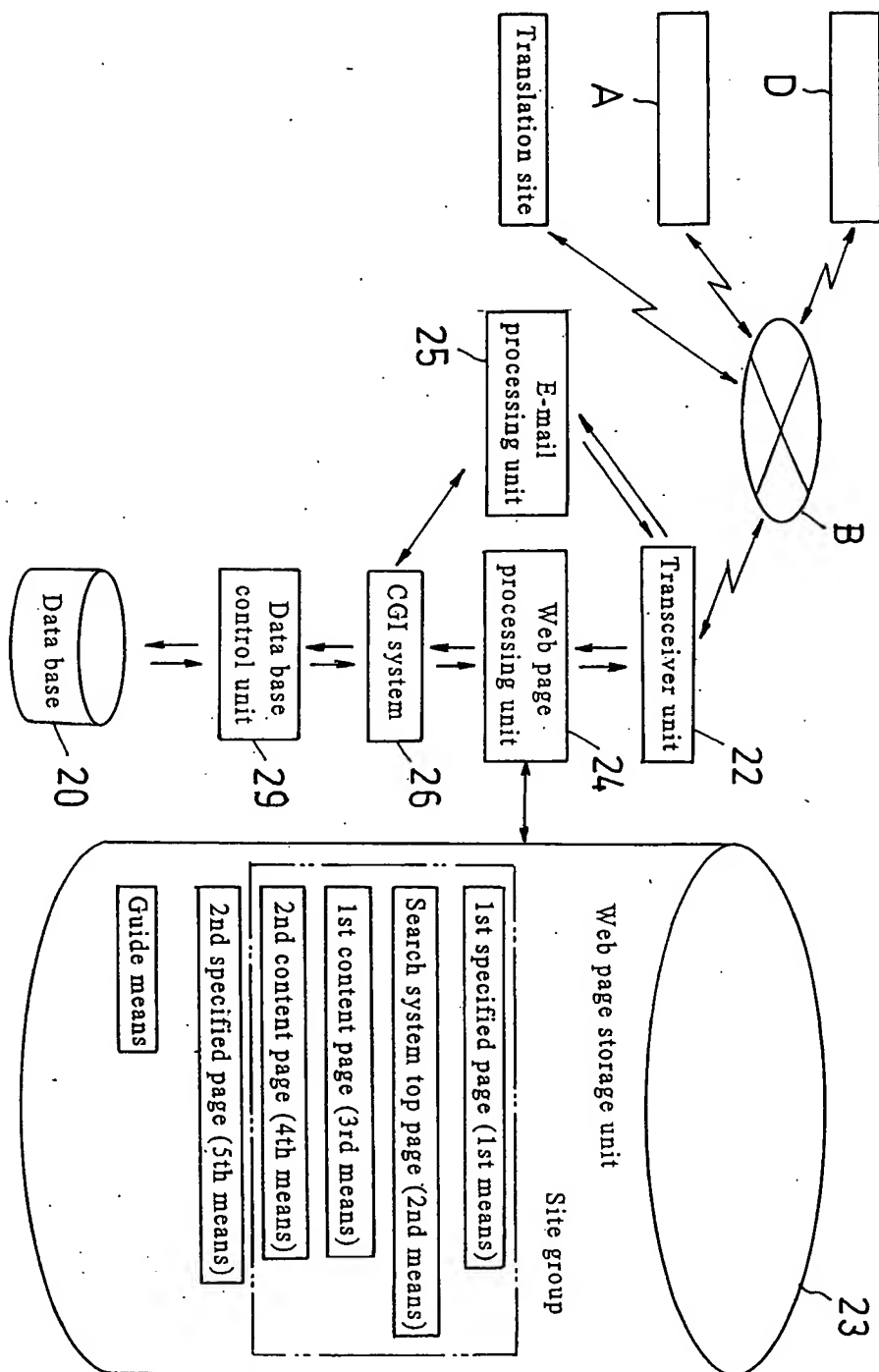


Fig.55

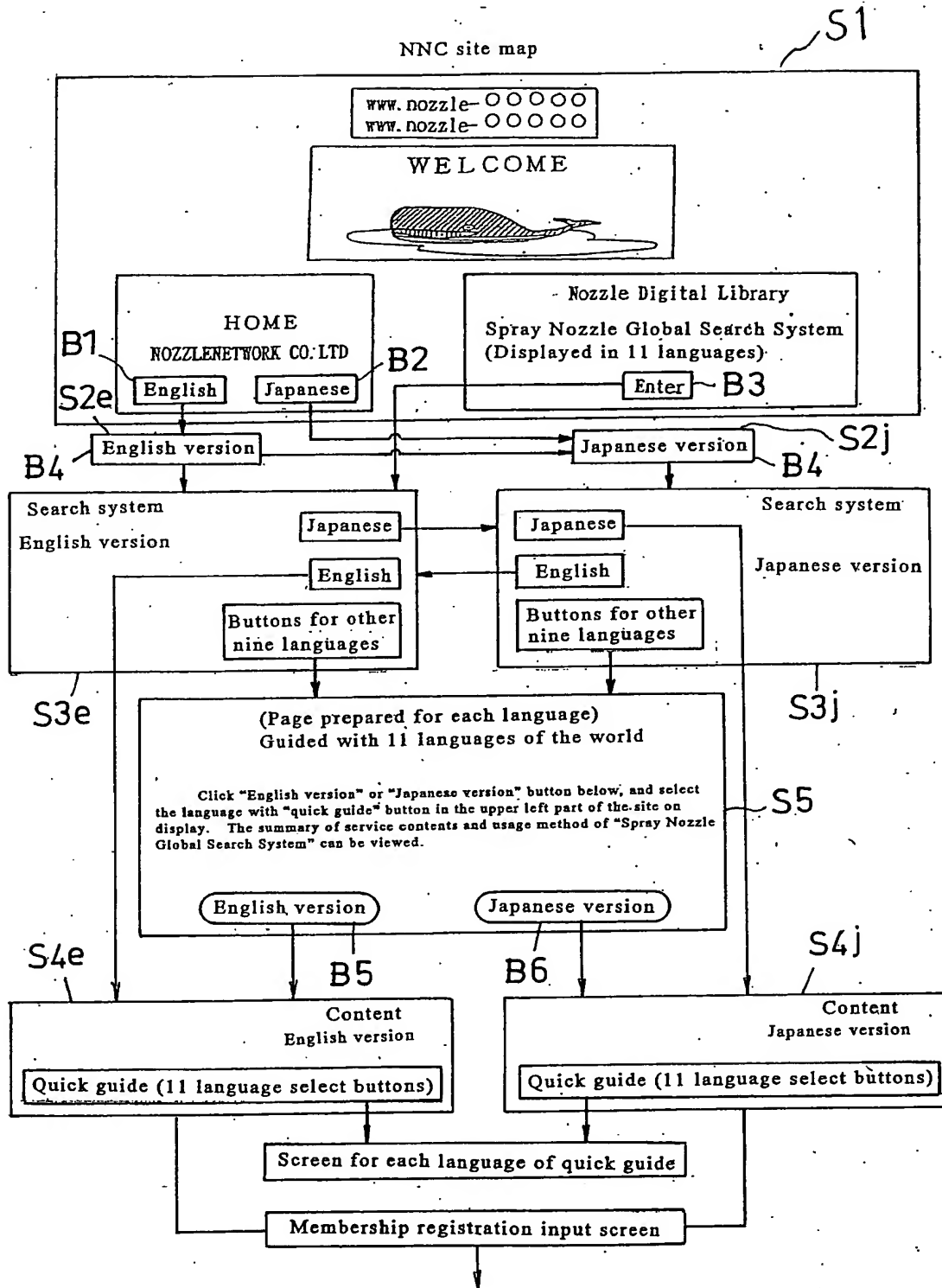


Fig 56

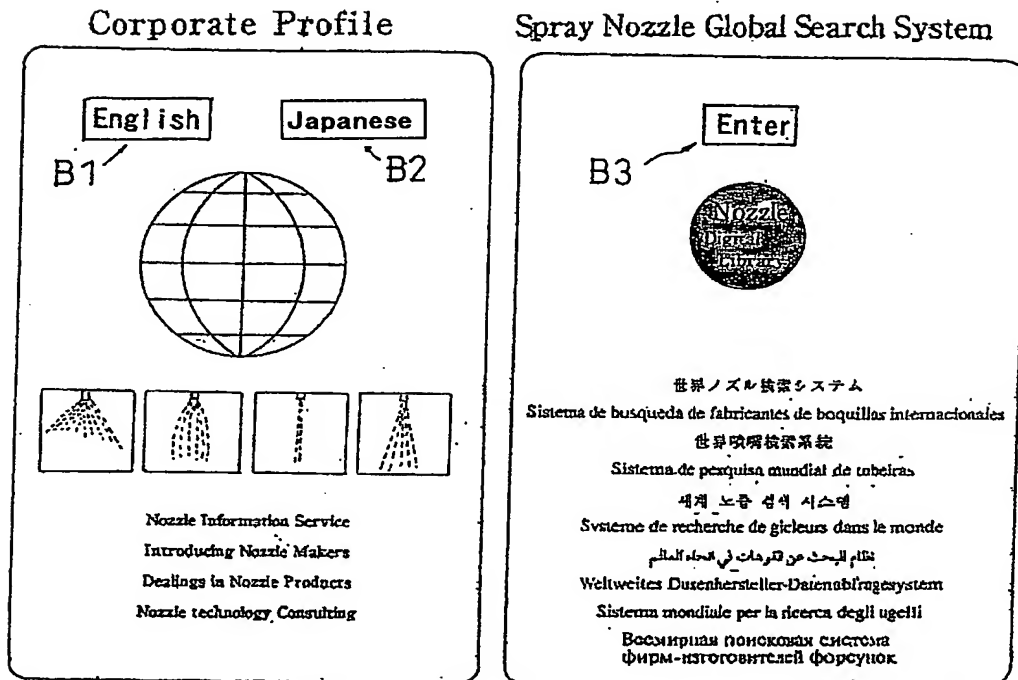
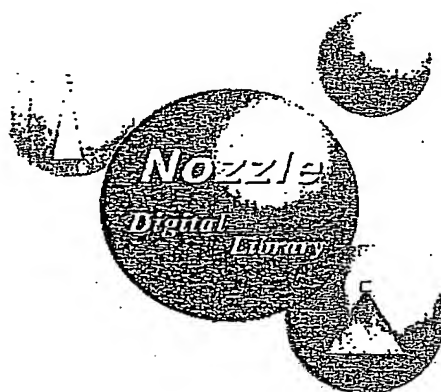


Fig.57

Spray Nozzle Global Search System

Retrievable by internet from any part of the world



Translation site: This site can be mechanically translated into languages of the world

This system is provided by ooo Co., Ltd.

The spray nozzle is used to spray various fluids through water or air nozzle for cooling and cleaning in all industries of the world. There is at least several tens of generally-called atomization and spraying nozzle manufactures, which include overall nozzle manufactures and unique nozzle manufactures specializing in atomized spray nozzle. In this way, various nozzle manufactures have various features. The ooo Co., Ltd. with its "Spray Nozzle Global Search System" is in a position to provide a vast amount of nozzle information to nozzle users over the world through the internet.

Fig 58

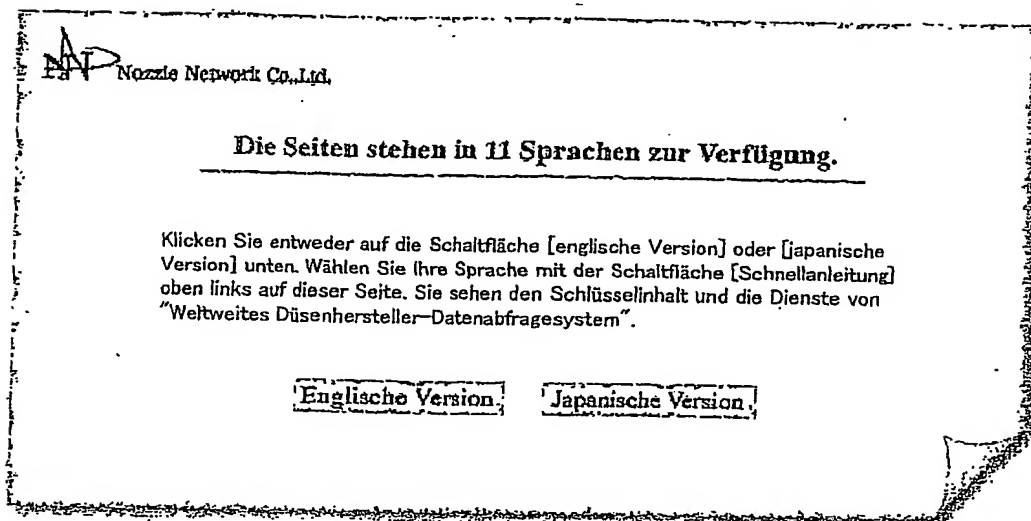


Fig.59

Data base carrying 7.5 million nozzle search items

Spray Nozzle Global Search System

Member please log in from here

Member entrance ~ 42

Start here for immediate use

クイックガイド
Quick Guide
快速检索指南
Guia rapida
Guia rapido
Guide d'utilisation rapide
Schnellanleitung
Guida rapida
간단안내서
Краткое руководство
دليل الاستخدام السريع

40

Spray Nozzle Global Search System

oooo Co., Ltd. has developed a novel system accessible from anywhere in the world to search for spray nozzles of all over the world through internet. The spray nozzle is used as an essential part in all fields of industry over the world. This system which has been developed by our company offers the users the chance of selecting the most proper nozzle.

The data base has registered therein about 7.5 million items of nozzle information and numerical nozzle data including images in a total of 2900 pages of catalogs of 20 nozzle manufactures of the world and at least 110 thousand types of nozzle products, accessories, related devices and other nozzle data carried in the catalogs. The job that has conventionally required several hours to search from printed catalogs can be performed quickly by this system.

Mechanically translated to languages of world

Translation site ~ 41

Users not registered as member

Users not registered as member are requested to take the registration procedure by reading the following explanation.

First, register your membership (free of admission fee and membership fee), and take the (fee-charging) usage procedure. Each procedure can be started at the usage procedure column in the lower part of the screen.

Fig.60

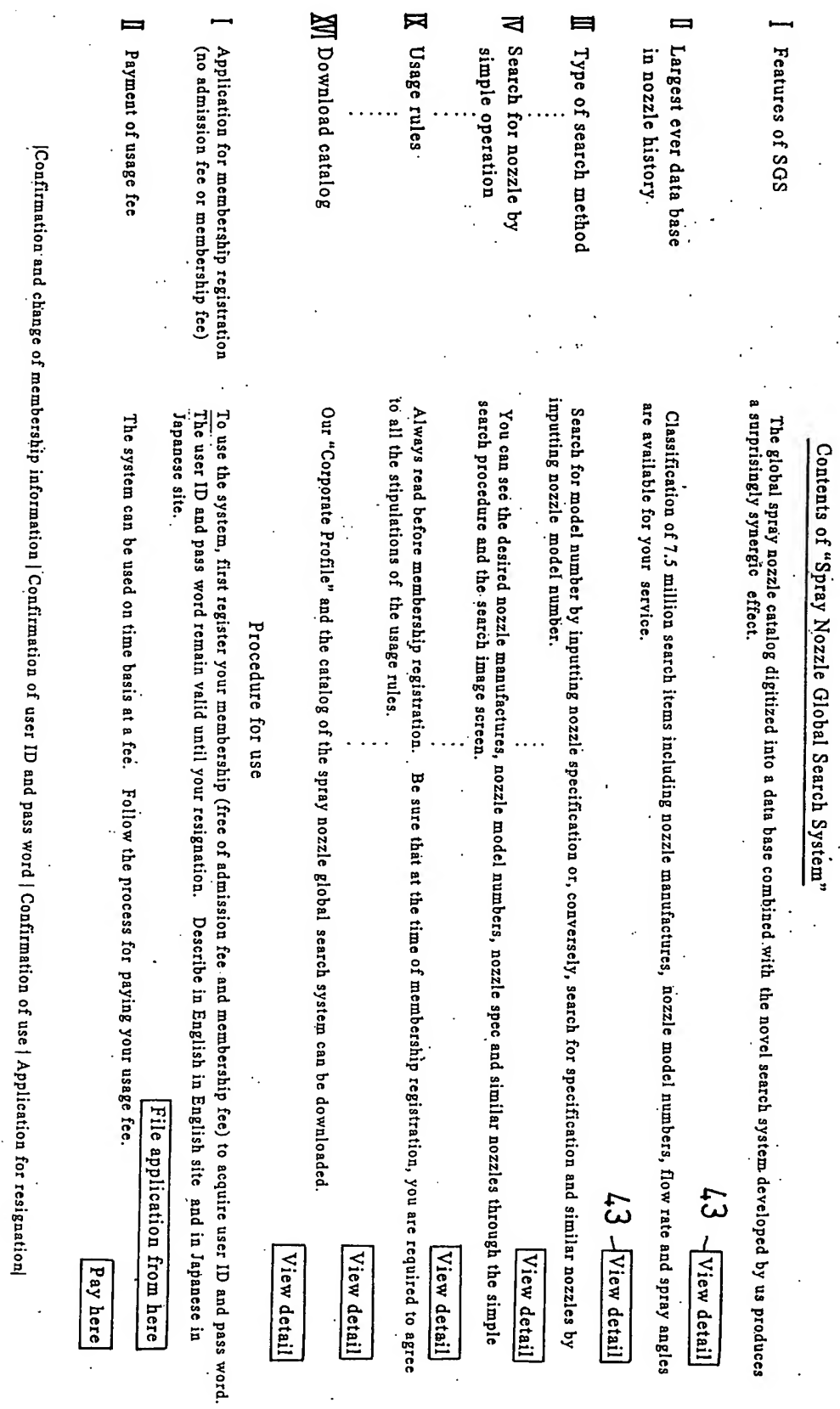


Fig.61

Quick Guide to "Spray Nozzle Global Search System"

Brief description for hurried users
Speedily search for world nozzle information

1. A system that can be used at any place in the world to find the desired nozzle within several tens of seconds from at least 110 thousand items of products of 20 nozzle manufactures of the world through the internet.
2. Four types of search method and simple operation
Just input preset items on search criteria input screen and click search button

Search type	Description
Standard search	Rough model number can be retrieved by simple input items
Expert search	Pinpoint model number search possible by detailed input items
Nozzle spec search	Retrieve manufacture and nozzle spec by inputting nozzle model number
Similar nozzle search	Similar nozzle can be retrieved by inputting nozzle model number

3. Procedure for usage

First, access the procedure screen for membership registration (free of admission and membership fees). Each site screen guides you sequentially to start nozzle search.

Membership registration (free of admission and membership fees)

Start here for membership registration

Select usage time and fee

Follow fee payment procedure.

Start nozzle search

About 5 minutes

4. Usage fee and method of payment

The system can be used on time basis at a fee, which is payable only by credit card. Payment by other than Japanese currency can not be done from Japanese site. Use English site to pay in other than Japanese currency.

Now-in sales campaign period

Usage time	Special discount usage fee (before tax)
10 minutes	yen
30 minutes	yen
60 minutes	yen

Payment method
Pay only by credit card

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>			

Currency conversion site

Agreed usage time starts counting when clicking the "search start" button first on search criteria input screen. Within agreed period, four types of search methods can be repeatedly and freely used.

(Remarks)

1. After understanding "Spray Nozzle Global Search System" (SGS) roughly by quick guide, always confirm the detailed contents of each item on table of contents.

2. For membership registration, input in Japanese in Japanese site and English in English site.

Apply for membership registration

Return

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